

IN THE FIELD

Field Museum
Member Magazine

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ON THE COVER

Gold wreath adorned with a Nike
figure, Iron Age, 375-325 BC, Zlatinitsa-
Malomirovo, Bulgaria.

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Dear Friends,



Last year, I shared with you the Field Museum's new mission statement, updated for the challenges and opportunities facing museums today and for our unique capacity to answer them:

The Field Museum connects all of us to the natural world and the human story.

I believe wholeheartedly in this mission—in its relevance for our current moment, as well as in our ability to meet its promise through exceptional research and our drive to share it.

In this issue, you'll read about *First Kings of Europe*, a new special exhibition that embodies our mission. It is a testament to extraordinary human achievement that took place thousands of years ago but is directly relevant to how we live every day. It features magnificent objects that were made and used at a time when social complexity was just beginning. This period ushered in everything, both positive and negative, that has come from technological advancement, including social inequality. These stunning artifacts have a great deal to tell us about why we live and interact with the world in the way we do today. It brings together objects that have never before been displayed in one place, thanks to collaborations with our colleagues in more than a dozen other museums.

I hope you'll visit *First Kings of Europe* to experience for yourself these powerful connections to our shared human story.

Warm regards,

A handwritten signature in dark ink that reads "Julian Siggers". The signature is fluid and cursive, with a long, sweeping line extending from the end of the name.

Julian Siggers, PhD
President and CEO

(Right) Kevin Beaudin, an artist at Blue Rhino Studio, poses with the partially-finished tardigrade model.

(Below, right) Beaudin works on a clay maquette, a small scale test model, which will be approved before work begins on the full-size tardigrade for the exhibition.

MEET THE INDESTRUCTIBLE TARDIGRADE

BY BEN MILLER, EXHIBITION DEVELOPER

Throughout history, people have imagined what immortality might be like. But nature has an answer, and it's not pretty. Meet *Milnesium tardigradum*, one of more than 1,300 known species of tardigrades. These arthropods aren't actually immortal (most only live 1 to 2 years), but they're the closest evolution has come to creating an indestructible animal. Tardigrades can dehydrate themselves and endure for decades in a state of suspended animation. While they'd prefer to live in wet, mossy places, they can survive in the deep sea, volcanoes, and even outer space.

Tardigrades are also tiny—the width of two human hairs. In order to feature a tardigrade in *Death: Life's Greatest Mystery*, we had to scale it up a bit. Our model is as big as a black bear—4,000 times a tardigrade's actual size! And thanks to Associate Curator Petra Sierwald, PhD, it's also a candidate for the most accurate tardigrade model ever made.

Send us your selfies with the giant tardigrade using the hashtag **#LifesGreatestMystery!**



© BLUE RHINO STUDIO



© BLUE RHINO STUDIO



© BLUE RHINO STUDIO

DEATH IS NOT THE END

BY BEN MILLER, EXHIBITION DEVELOPER

When a whale dies and sinks to the bottom of the ocean, its body is a bonanza of food for the creatures living on the cold, empty sea floor. A single whale can support hundreds of species for decades—including some that scientists have never observed anywhere else.

The Field Museum team zeroed in on the “whale fall” early in the three-year development of *Death: Life's Greatest Mystery*. Not only are these underwater ecosystems amazing natural history phenomena, but they also exemplify one of the central ideas of the exhibition: death is not the end, it's a beginning.

Creating the diorama began with extensive research. Associate Curator for Invertebrate Zoology Janet Voight, PhD, oversaw each stage of the diorama's

creation in collaboration with Craig Smith and Emily Young of the University of Hawaii. Our diorama is primarily based on a specific whale fall on the Davidson Seamount, off the coast of central California. Discovered in 2019, this site is ideal because it is well-documented on video. It's also a good example of a whale fall ecosystem in transition: the flesh has nearly been picked clean by larger scavengers, and the weirdest whale fall inhabitants—bone-eating worms—have begun to appear.

To build the diorama, we turned to the Field Museum's longtime collaborators at Blue Rhino Studio. Lead model makers Carmen Martin and Maddy Dahl started with a cast of a real minke whale skull, then sculpted dozens of deep sea denizens to populate the diorama. Whenever possible, the Field Museum team provided photos and measurements of specimens from our collection.

Lighting the diorama was the final step. “Whatever you do, don't have dappled light around it,” Voight, a veteran of many deep sea dives, reminded the team.

“This is the deep dark sea, no sunlight!” The completed diorama is lit with a bright spotlight, imitating the lights of a submersible.

Explore perspectives on death and life through culture, science, and art in the Field Museum's newest exhibition, *Death: Life's Greatest Mystery*.

Death: Life's Greatest Mystery was organized by the Field Museum.



Lilly Endowment Inc.
A Private Philanthropic Foundation

Major support is generously provided by Lilly Endowment Inc.

Additional support is provided by Alicia and Peter Pond.

This program is partially supported by a grant from the Illinois Arts Council Agency.

(Above) Animal models are placed in their final positions as the whale fall diorama nears completion.

WHAT'S WITH THE HOLES IN SUE'S JAW?

BY JINGMAI O'CONNOR, PHD, ASSOCIATE CURATOR OF FOSSIL REPTILES, NEGAUNEE INTEGRATIVE RESEARCH CENTER

Pathology is one of the most difficult things to unravel in an extinct organism. Even with humans—the best understood of all living organisms—it's extremely difficult to determine the pathological cause of death from the skeleton alone. What hopes do we have of determining the cause of pathologies observed in animals more than 66 million years old, when all we know of their biology is still limited to what we can infer from incomplete skeletal material (and, if we're lucky, a few odd patches of skin tissue)?

This is the case with SUE, the most complete adult *T. rex* currently known to science. SUE reveals numerous pathologies across its skeleton—arthritis in the tail, bone infection in the left fibula, broken ribs, a torn tendon in the right humerus, and gout in the hands. But the pathology that has scientists the most stumped are strange circular holes that perforate the main bone forming the back half of the jaw.

These holes are clearly not part of the normal skeletal morphology of *T. rex*. They occur without pattern and are found in about 15% of known specimens of tyrannosaur jaws. What caused them has long puzzled paleontologists. First thought to be a bacterial infection, they were more recently interpreted as resulting from infection by a parasitic protozoan called *Trichomonas gallinae*. This protozoan is estimated to be present in all modern pigeons without causing harm, in most cases.

Disturbances to the immune system can lead to imbalances that allow the protozoan populations to cause an illness known as frounce, or trichomoniasis, which can cause the throat to swell and the bird to starve to death. This was the hypothesized demise of the mighty SUE. However, closer inspection of the holes in SUE's jaws show small spurs of bone growing from the edges, indicating years of healing. Furthermore, a thorough review of veterinary literature reveals no evidence that trichomoniasis causes penetrating lesions in the back half of the jaw.

What caused these holes? It's still a mystery, but we can say it was not likely *Trichomonas*, and whatever caused them did not kill SUE.

SUE the *T. rex* is part of the *Griffin Dinosaur Experience*, made possible by the generous support of the Kenneth C. Griffin Charitable Fund.

FIELD MUSEUM

A retrodeformed cast of SUE's skull shows the mysterious holes in the back of the lower jaw.





Discover How Dinosaurs Learned to Fly!

Written by Associate Curator of Fossil Reptiles Jingmai O'Connor, PhD, *When Dinosaurs Conquered the Skies* is an exquisitely illustrated exploration of how dinosaurs evolved the ability to fly and eventually became the birds we know today.

Soar through fascinating facts about bird evolution, including how birds and *Tyrannosaurus rex* are related, how birds lost their teeth, and more! The story of bird evolution is fascinating. *When Dinosaurs Conquered the Skies* explores this incredible history in a digestible, accessible way. Written for readers 8-12 years old, this book proves that fact can definitely be stranger and more exciting than fiction! Can you imagine coming face-to-face with a toothy pigeon?!

Get your copy of *When Dinosaurs Conquered the Skies* at the Field Museum store or online at store.fieldmuseum.org.

FIRST KINGS OF EUROPE

CURATOR OF ANTHROPOLOGY,
NEGAUNEE INTEGRATIVE
RESEARCH CENTER

FIELD RESEARCH ASSOCIATE
AND ASSISTANT PROFESSOR
OF ANTHROPOLOGY,
UNIVERSITY OF GEORGIA

Images of royalty pervade Western history and thought—from the legendary tales of Arthur and Guinevere to Anna and Elsa in Disney's *Frozen*. The history of Western civilization is ripe with depictions of royal families, stories of their successes, and lessons learned from their failures.

We know what kings and queens are, but where did they come from? This is the story of the Field's newest exhibition, *First Kings of Europe*. It begins during the Neolithic period, a time when prehistoric farmers lived without kings in what is today the Balkan Peninsula in southeastern Europe. It ends in the Iron Age, ruled by kings whose names we know from ancient written sources.

First Kings of Europe is an ambitious international collaboration between the Field Museum and institutions in southeastern Europe and North America. The exhibition brings together some of the most compelling archaeological finds from the Neolithic, Copper Age, Bronze Age, and Iron Age (from about 8,000 to 2,500 years ago), to tell the story of the emergence of leadership, inequality, and hierarchy within prehistoric farming communities of southeastern Europe. With artifacts from 26 museums and 11 countries, *First Kings of Europe* explores how small autonomous communities eventually gave rise to powerful, centralized, bureaucratic states. The exhibition investigates how power was acquired by means of technology, trade and exchange, conflicts and warfare, as well as rituals and ceremonies.

Several hundred of the artifacts are from across southeastern Europe, including Albania, Bosnia and Herzegovina, Bulgaria, Croatia, Hungary, Kosovo, Montenegro, North Macedonia, Romania, Serbia, and Slovenia, and have never been displayed outside the country in which they were discovered.

First Kings of Europe provides a unique opportunity for North American descendant communities from these parts of Europe to celebrate their common cultural heritage. Visitors without direct connections to the region will learn about the long and rich cultural history of southeastern Europe.

***First Kings of Europe* opens at the Field Museum on March 31, 2023.**

First Kings of Europe was organized by the Field Museum. The exhibition has been made possible in part by a major grant from the National Endowment for the Humanities: Democracy demands wisdom.



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FOR THE
HUMANITIES**

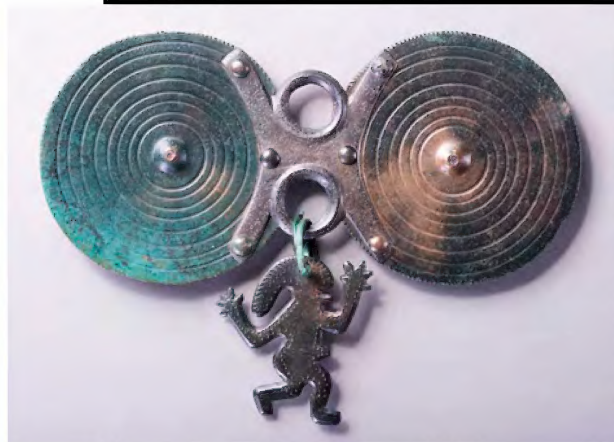
Any views, findings, conclusions, or recommendations expressed in this exhibition do not necessarily represent those of the National Endowment for the Humanities.

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FOUNDATION**



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First Kings of Europe brings together some of the most compelling archaeological finds from the Neolithic, Copper Age, Bronze Age, and Iron Age.

***First Kings of Europe* Member Preview Days:
March 29th and 30th
Learn more on page 26 »**

(Opposite, top) Thracian King Kotys feasting set.

(Opposite, middle) Richly decorated bronze sword, Bronze Age, 1700–1600 BC, Hajdúsámson, Hungary. Warriors of Bronze Age Europe required weapons that were effective in battle as well as stylish. This sword was part of an intentionally buried hoard, perhaps to commemorate a battle or honor a fallen comrade.

(Opposite, bottom) Gold stag appliqué, Iron Age, 700–500 BC, Zöldhalompuszta, Hungary.

(Above) A bronze fibula (garment pin), with a human pendant. Iron Age, 500–300 BC, Gracac, Croatia. These items were made by a group of people called the Iapoda, who inhabited the western Balkan peninsula's forested coast and islands of the Adriatic sea.

THE CURIOUS CASE OF THE ALVA METEORITES

BY JIM HOLSTEIN, COLLECTIONS MANAGER OF PHYSICAL GEOLOGY, GANTZ FAMILY COLLECTIONS CENTER

Mark Schwerdtfeger—a farmer from Capron, Oklahoma—found not just one but two types of meteorites on his farm. For decades, he has been picked up rocks in his fields and amassed quite a collection. Early in 2017, while walking through his alfalfa field, he found a rock that he suspected might be a meteorite. An Internet search directed him to the meteorite identification program at the Robert A. Pritzker Center for Meteoritics and Polar Studies (RAPC) at the Field Museum. He sent the rock to us and we confirmed that it was, in fact, a meteorite. Later that same year, he found a second specimen along the side of a road about a mile from the first, which we also confirmed to be a meteorite.

At the Museum, we classified the specimens and determined that these rocks are two different types of stony meteorites within the group



known as Ordinary Chondrites. The classification results were submitted to the Nomenclature Committee of the Meteoritical Society, which recently approved the analysis and names. The meteorites were named Alva (a) and Alva (b)—named after the nearby town of Alva, Oklahoma.

Most meteorites originate in the asteroid belt between Mars and Jupiter. However, some exceptionally rare types come from the Moon and Mars. Though the meteorites from Mr. Schwerdtfeger's farm are called Ordinary Chondrites, there is nothing ordinary about his discovery. Meteorites in general are very rare and finding one is a once-in-a-lifetime event for the average person. Finding two



different types so close to one another is extremely unusual. It's like being struck by lightning the same day as winning the lottery. Keep in mind that Mr. Schwerdtfeger picked through tens of thousands of rocks just to find these two meteorites.

Mr. Schwerdtfeger donated pieces of the meteorites to the Field Museum where they will be made available to scientists around the world.

(Above, left top) Roadside where Alva (a) was discovered.

(Above, left bottom) Alfalfa field where Alva (b) was discovered.

(Above, right) Mark Schwerdtfeger and his amazing finds.



Cross sections of Alva (a)—right—and Alva (b)—left—showing their differing compositions.

Textiles have become important conduits and archives of not only history and religion, but also of daily life.



EMMA TURNER-TRUJILLO

SEE THE FIELD'S ANDEAN TEXTILE COLLECTION ONLINE!

BY EMMA TURNER-TRUJILLO, ASSISTANT REGISTRAR, GANTZ FAMILY COLLECTIONS CENTER

For thousands of years, Andean peoples have used a rainbow of dyes and fibers derived from natural—and, in recent times, synthetic—sources. Since the Indigenous languages of Andean peoples are primarily oral in form, myths and legends have long been communicated and memorialized through weaving. Textiles have become important conduits and archives of not only history and religion, but also daily life.

Although enduring effects of colonialism have threatened indigenous ways of life, native textile traditions have persisted.

The online exhibition: *Weaving the Past Into the Future: Contemporary Craft Among Andean Weavers* highlights nine modern textiles sourced from the Central and South-Central Andes, made by weavers in Perú and Bolivia, some of which have named artists. Weaving collectives such as the Centro de Textiles Tradicionales del Cusco (CTTC) and the Proyecto Artesanía Zona Andina (PAZA) play an important role in preserving traditional skills in the Andes. This exhibition refers to the history of these collectives, exploring how ancestral knowledge is adapted for contemporary use, thus ensuring the continuity of weaving traditions and Indigenous communities into the future.

Through the dyeing of fibers, the gathering and spinning of wool, the organization of labor, and the significance of local religions, this exhibition explores how the CTTC, PAZA, and other weaving communities thread their pasts into the

present, looking to weave a future on their terms. The textiles used in the exhibition are part of a gift from Helen Samuels, who travelled extensively throughout Latin America and Africa. This bilingual, digital exhibition was the culmination of a course I taught for a graduating class of University of Illinois at Chicago Museum and Exhibition Studies students.

Scan this QR code to see more of the Field's Andean Textile Collection.



(Above) UIC graduate students Thelma Elawala, Elisa Soto, and Rosa Maria Varillas Palacios view Andean textiles for the exhibition.



© RICHARD REE, PHD

FLOWERS MAKE GOOD NEIGHBORS

BY RICHARD REE, PHD, CURATOR OF
FLOWERING PLANTS, NEGAUNEE INTEGRATIVE
RESEARCH CENTER

Living with others can be challenging, but, for the Rhododendrons of the Hengduan Mountains of southwest China, the key to mitigating conflict over shared space and resources is not to compete at all.

In the Hengduan Mountains, many closely related species of *Rhododendron* bloom below snow-capped peaks during the summer months. Recently diverged from common ancestors, their inherited similarities mean they compete more intensely for things like space, nutrients, and pollinators.

Theory predicts that for such species to coexist in harmony, they should differ in their *ecological niches*, meaning the ways in which they use resources and make their living. For example, to avoid sharing pollinators, they could differ in the size, shape, and color of their flowers, or they could flower at different times throughout the season. By studying these differences and how they evolved, we can better understand why the Hengduan Mountains harbor such extraordinary biodiversity.

In the summer of 2019, postdoctoral fellow Qin Li spent 2 months in the Gongga Mountain Nature Reserve in western Sichuan, measuring the traits and monitoring the flowering progression of 34 rhododendron species at more than 100 sites. Across this spectacular landscape, Qin and her field assistant Ji Wang of Sichuan University navigated treacherous roads and endured rugged living conditions.

Their efforts paid off, as we reported in a recent paper. From the abundance of data

they collected, a clear pattern emerged: species living together tend to flower at different times, but otherwise have no detectable differences in their niches. This suggests that mating with close relatives (at the expense of mating with one's own species) is an important source of conflict, which is reduced more readily by evolutionary divergence in flowering time than in other traits such as flower size and shape. This likely explains why, early in the spring, some rhododendrons are among the first species to bloom, blazes of color against the snow, and others flower late into the fall. Connecting this new knowledge to how climate change is affecting fragile mountain ecosystems is a priority for conservation planning.

(Above) Flowering *Rhododendron* plants in the foothills of the Hengduan Mountains.

WELCOME WESTON TESTO!

BY MARK ALVEY, ACADEMIC COMMUNICATIONS MANAGER

Weston Testo, PhD, Assistant Curator of Pteridophytes, arrived at the Museum in mid-August. Dr. Testo is a botanist specializing in the evolution of ferns and lycophytes (vascular plants that disperse by way of spores rather than seeds) and biogeography. He first became fascinated with ferns and their amazing diversity while doing undergraduate fieldwork in Costa Rica. Then, in graduate school, his interests moved into biogeography, studying how the formation of the Andes 10 million years ago affected the diversity of lycophytes. "Ferns and lycophytes have been around for a very long time," Dr. Testo notes. "The fossil record for lycophytes goes back more than 400 million years, and ferns almost as far. While they are not as species-rich as flowering plants, there are still many of them, and they have been relatively understudied. I am interested in documenting their diversity, and how it came about."

Dr. Testo's work integrates natural history collections, biodiversity informatics, remote sensing, and modeling approaches, and also informs conservation efforts. He has published extensively, with recent papers in *Nature*, *New Phytologist*, and *Journal of Biogeography*. He comes to the Field from a postdoctoral research appointment at the University of Gothenburg in Sweden, preceded by a similar position at the University of Florida. He received a B.A. in Biology from Colgate University and his PhD in Plant Biology from the University of Vermont. At the Field, he is continuing work on a plant conservation project in Haiti and the Dominican Republic, and is finalizing taxonomic treatments for several groups of ferns from Venezuela. In October and November, he conducted fieldwork and taught a course for early career scientists in Colombia.

Dr. Testo estimates there are still thousands of species yet to be described—many of them one-of-a-kind specimens in museum collections like the Field's. "It takes a lot of work to understand their role ecologically, and if we care about protecting them, which I think we should, we need to understand what they are and where they occur."



(Left) Weston Testo, PhD.

(Below) Testo (left) and colleague Michael Sundue, PhD, (right) examine a rare fern during a recent field trip to a remote area of western Colombia.





Monarch Butterflies are Endangered!

By Erika Hasle

LEAD CONSERVATION
ECOLOGIST, KELLER SCIENCE
ACTION CENTER

The IUCN determined that the monarch should be listed as endangered because intensive agriculture, along with herbicide and pesticide use, kills monarch butterflies, caterpillars and their host plant, milkweed.

In the summer of 2022, the migratory monarch butterfly (*Danaus plexippus plexippus*) was added to the International Union for Conservation of Nature (IUCN) Red List of Threatened Species™ as endangered. This announcement of heightened conservation concern came during a summer when the Field Museum's Monarch Community Science team was getting daily emails from concerned monitors who had seen few adult butterflies in the month of June and had recorded few, if any, monarch eggs on their milkweed plants. This was the first summer in recent memory when it was hard to find a monarch butterfly.

The IUCN is an international organization of governmental and non-governmental organizations working for the conservation of the natural world and the sustainable use of natural resources. In 1964, the IUCN established its Red List to track the extinction risk of the world's biodiversity. The IUCN determined that the monarch should be listed as endangered because intensive agriculture, along with herbicide and pesticide use, kills

monarch butterflies, caterpillars and their host plant, milkweed. Additionally, there has been habitat loss at their overwintering grounds and significant threats from climate change, including droughts and worsening storms, that impact the butterflies' migration directly.

Listing by the IUCN does not give the monarch any legal protection or provide special funding for monarch conservation. However, elevating the monarch to endangered status draws international attention to the importance of conservation for this species. This status change comes at a time when the US Fish and Wildlife Service (USFWS) is re-evaluating whether to include the monarch as endangered under the US Endangered Species Act. Listing by USFWS would create paths for legal protection of the monarch butterfly and greater access to funding for monarch butterfly recovery. A decision from USFWS is expected before the end of 2024, but could come much sooner.

What can you do to help?

18M

MILKWEED STEMS
CURRENTLY IN CHICAGO

1.8B

NEW MILKWEED
STEMS NEEDED IN
NORTH AMERICA TO
SAVE MONARCHS

30%

OF ESSENTIAL NEW
MILKWEED STEMS CAN
BE ADDED IN CITIES

JOIN OUR MONARCH COMMUNITY SCIENCE TEAM

From June through early September, we enjoy seeing the familiar monarch butterfly across Chicago. Many monarchs start their migration south right here in the city. But they need their host plant, milkweed, in order to survive and continue on their epic journey.

We're asking residents across the Chicagoland area to join us in recording information about milkweed plants in their yards and communities. Whether you have a potted plant on your balcony or a yard full of milkweed, the information you gather will help future monarch butterflies survive.

The Field Museum Monarch Community Science team collects data on monarch eggs and caterpillars in urban gardens throughout the Chicago Region. The 2022 field season began with monarchs being conspicuously absent throughout the Chicago area. The Monarch Team fielded emails from many concerned monitors who were not seeing monarch eggs on their milkweed plants and who were seeing few adult monarchs throughout all of June and the first two weeks of July. Scan the QR code to get involved!

More project results can be found at bit.ly/monarchmonitors along with a sign up form for the project's newsletter.

PLANT YOUR OWN NATIVE GARDEN

March is a great time to start planning and sourcing plants for a native plant garden, and providing habitat is the single most important thing we can do for monarchs, and other pollinators, in the Midwest. Many native plant sales happen in March or April and they often take pre-orders. After four years of data collection, the Monarch Community Science team is just beginning to draw conclusions about what makes a successful urban monarch garden. However, the patches that typically see the most eggs each season tend to be older and more established with more than one species of milkweed and a diversity of other flowers blooming throughout the season. Generally, larger gardens with more plants do better than smaller gardens with fewer plants, but a single plant in a pot can support eggs. Don't be discouraged if your garden is not successful in the first year, especially if it was 2022. The best garden is the one you are willing to plant and enjoy! You can find several resources for planting your own Native Pollinator Garden at fieldmuseum.org.

Scan this QR code
to learn more about
the Field Museum
Monarch Community
Science Team.



(Opposite, top) Monarchs need fall blooming flowers such as these Asters to fuel up for their fall migration to Central Mexico.

(Right) Native midwestern plants are the focus of our Museum outreach. However, familiar garden plants can also provide much needed nectar for monarch butterflies.





(Left) Dr. de Medeiros climbs a palm tree to sample its flower insects in Panama.

(Below) Bruno de Medeiros, PhD



TAUANA CUNHA

WELCOME BRUNO DE MEDEIROS!

BY MARK ALVEY, ACADEMIC COMMUNICATIONS
MANAGER

Bruno de Medeiros, PhD, joined the Field Museum as Negaunee Assistant Curator of Pollinating Insects in early September. Pollination is critical to all ecosystems on Earth, especially in the diverse tropics. As Dr. de Medeiros likes to point out, “most plants reproduce sexually, but they don’t move, so they have to use other methods to get their pollen from one plant to another for fertilization.”

Almost 90% of plants are pollinated by animals, most of which are insects. Many of the products that we as humans

consume, from coffee to high-yield biodiesel to—of course—honey depend on pollination by many different species of insects. “We tend to think of pollinators as butterflies and bees, and maybe occasionally flies and moths,” said Dr. de Medeiros, “but there is a huge diversity of species that pollinate flowers, and many different kinds of pollinating interactions.”

Dr. Medeiros studies that vast diversity of insects, with a primary focus on ecologically important plant-pollinator interactions in the tropics (e.g., between beetles and bees and the flowers they pollinate), combining field collecting, natural history descriptions, experiments, genomics, and collections-based systematics. He came to the Field from a postdoctoral research appointment at the Smithsonian Tropical Research Institute in Panama. He received his PhD in Organismic & Evolutionary Biology from Harvard University, preceded by Bachelor’s and Master’s degrees in Biology

from the University of São Paulo in Brazil. His current studies range from field-based experiments focused on understanding how palm trees came to interact with specialized pollinators to computer-assisted data aggregation to understand the evolution of insect-flower interactions.

Soon after his arrival, Dr. de Medeiros joined a cross-departmental collaboration funded by the Walder Foundation in which he is imaging and DNA-barcoding pollen from insects in the collection to identify the pollens’ source. Throughout the year, he will welcome four graduate students (three from Brazil, one from South Africa) to pursue collaborative research on beetles. One might even say that he is as busy as a bee (or a beetle). Above all, he is committed to better understanding the millions of species of insects that our planet relies on, and sharing his excitement about them.

Take me
out and
explore!

Daniel F. and Ada L. Rice Foundation Native Gardens

Laura Milkert & Iza Redlinski, Keller Science Action Center, Field Museum, Chicago IL

Installed in 2016–2017, the sustainable landscaping on the southern terraces of the Museum highlights plants native to Illinois—the same species that grow wild in our prairies and woodlands—and transforms the Museum into an urban haven for butterflies, bees, wasps, birds, and other animals. The Rice Native Gardens add another link to the inspiring corridor of restored prairie taking shape along the Chicago lakeside and serve as a living exhibit that extends the Museum's mission of discovery outdoors, where visitors and passersby can learn about local biodiversity and the Museum's work in conservation, ecology, and climate change.

Rapid Color Guide #831 | fieldguides.fieldmuseum.org | version 2 | 4/2021

Photos by Laura Milkert and Iza Redlinski. Produced by Juliana Philipp, Nigel Pitman and the authors.

☀ Full sun ☀ Part shade



Nodding Wild Onion

Allium cernuum

☀☀ July–August (18 in.)



Swamp Milkweed

Asclepias incarnata

☀☀ June–August (4 ft.)



Butterfly Weed

Asclepias tuberosa

☀☀ June–August (2 ft.)



New England Aster

Symphyotrichum novae-angliae

☀☀ August–October (5 ft.)



White Wild Indigo

Baptisia alba

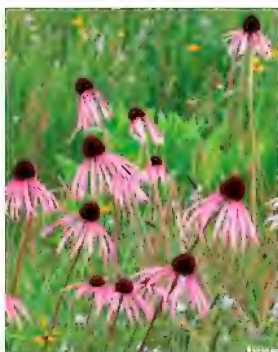
☀☀ June–July (4 ft.)



Purple Prairie Clover

Dalea purpurea

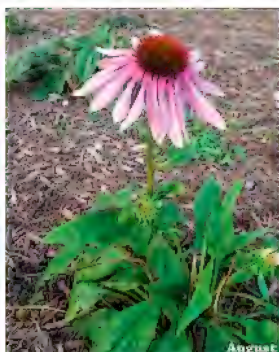
☀☀ July–September (2 ft.)



Pale Coneflower

Echinacea pallida

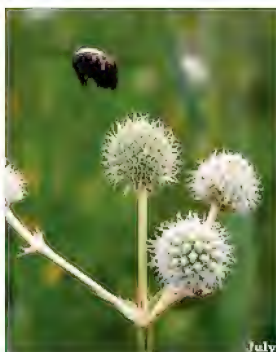
☀☀ June–July (3 ft.)



Purple Coneflower

Echinacea purpurea

☀☀ June–July (18–24 in.)



Rattlesnake Master

Eryngium yuccifolium

☀☀ July–September (4 ft.)



Queen of the Prairie

Filipendula rubra

☀☀ June–August (5 ft.)



Horse Mint

Monarda punctata

☀☀ July–August (2 ft.)



Switch grass

Panicum virgatum

☀☀ July–September (4 ft.)



Little Bluestem

Schizachyrium scoparium

☀☀ July–October (3 ft.)



Prairie Drop Seed

Sporobolus heterolepis

☀☀ August–October (3 ft.)



Hoary Vervain

Verbena stricta

☀☀ August–October (3 ft.)

The Field Museum acknowledges that it was built on the traditional homelands of the Bodéwadmik (Potawatomi), Hoocąk (Winnebago/Ho'Chunk), Jiwere (Ojibwe), Nutachi (Missouria), and Baxoje (Iowas); Kiash Matchitwuk (Menominee); Meshkwahkiha (Meskwaki); Asákiwaki (Sauk); Myaamiaki (Miami), Waayaahthanwaki (Wea), and Peeyankihšiaki (Piankashaw); Kiikaapoi (Kickapoo); Inoka (Illini Confederacy); Anishinaabeg (Ojibwe), and Odawak (Odawa). The Museum recognizes that the region we now call Chicago was the traditional homelands of many Indigenous nations, and remains home to diverse Native people today. The land we walk was and remains Native land.

FIELD
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Habitats in the Rice Native Garden

The Daniel F. and Ada L. Rice Native Gardens support native wildlife and migratory visitors all year round. As the gardens grow and mature, our scientists have continued to refine and add to the grounds. The Field Museum has introduced new, man-made habitat's to support native and migratory Chicago wildlife and continue enriching the ecosystem of Museum Campus. Next time you visit, stop by the Rice Native Gardens and see if you can spot them!



Take me
out and
explore!



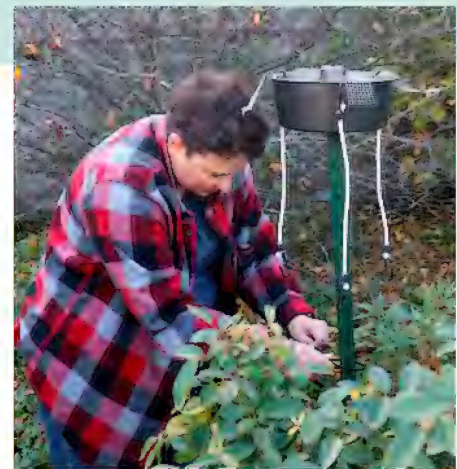
BAT BOXES

The Field Museum installed bat boxes in the Rice Native Gardens to help maintain healthy populations of bats in our community. Because bats eat mosquitoes—sometimes up to 1200 an hour—encouraging more bats to live and hunt in our area can make a big dent in our mosquito population. In turn this will lead to a reduction in mosquito-borne diseases and pesticide use. Reducing pesticides creates a healthier environment while reducing the amount of carbon dioxide in the atmosphere, which lessens the impact of climate change. In the Chicago area, much of bats' natural habitats have been destroyed, which often forces them to take shelter in our homes or workplaces. These bat boxes provide a safe and comfortable space for bats to roost, keeping them out of other places where they are not welcome.



PURPLE MARTIN BIRD HOUSE

Purple martins are part of a group of birds that build their nests in cavities. Overwintering in Brazil, these birds return to North America to lay their eggs. Most purple martins end up east of the Rocky Mountains, where they rely on man-made structures for housing. Without our intervention, these birds wouldn't have anywhere to nest or hatch new purple martins. Next time you visit the Rice Native Garden, check out the large white bird houses towering over the native plants. If you come in April, you might catch a glimpse of these striking dark blue birds.



ENVIRONMENTAL DNA PANS

What are these metal pans in the Rice Native Garden?

If you've walked through the Rice Native Garden recently, you may have noticed some strange-looking metal pans distributed throughout the terraces. These are passively capturing the air and pollinator eDNA samples to help our scientists characterize pollinator diversity in the gardens.

What is eDNA?

Environmental DNA, or eDNA, is the DNA that organisms leave behind in their environment. It can be captured from soil, water, and air—basically anywhere organisms can go. With new monitoring technologies, scientists can use eDNA to detect what species live in an area. This is incredibly helpful when it comes to monitoring healthy populations of native species or discovering invasive species before they become a problem.



IN THE FIELD PHOTOGRAPHY CONTEST

At the Field Museum we encourage everyone to get outside and connect with the natural world and the human story. What better way than snapping a stunning photograph of the nature that's all around us? Join the Field family in an exclusive photography contest for members this summer!



CATEGORIES:

Urban Wildlife

Document the cooperation, or lack thereof, of the natural world in human-made environments.

Real-life Diorama

Inspired by the Field's renowned taxidermy dioramas, portray animals and plants in their natural habitat. This category can also contain landscapes.

Museum Moments

Capture your favorite moments at the Field Museum, including exhibitions, dioramas, and other areas inside or outside the building. This category encourages portraits and candid photos of members and member families visiting the Museum (with proper releases).

Kids can participate too! For each category we will select a winner who is under 18 in addition to an adult winner.



Submissions will be open beginning April 3, 2023 through August 1, 2023.
« Scan to learn more information on how to enter!

No purchase necessary. Open to Field Museum Members and their households aged 5 and up; participation by minors requires parental permission. Must be a legal U.S. resident. Contest begins 4/3/23 and ends 8/1/23. Void where prohibited. Official rules available at fieldmuseum.io/field-photo-contest.





A Lower Devonian *Prototaxites axis* from Quebec, with Fran Hueber, PhD in the foreground.

CAROL HUTTON

A TWENTY FOOT TALL PREHISTORIC FUNGUS?!

BY MATTHEW P. NELSEN, PHD, RESEARCH SCIENTIST, NEGAUNEE INTEGRATIVE RESEARCH CENTER

The Silurian (443-419 million years ago) and Devonian (419-358 million years ago) were geological periods that pre-dated birds, mammals, and flowers. During this time, terrestrial ecosystems were sparsely vegetated with short plants. However, these landscapes were punctuated with columnar structures up to 24 feet tall and 3 feet wide, which towered over the surrounding vegetation! Picture telephone poles looming over the landscape. What were these mysterious structures?

This question has been argued by scientists for more than 150 years, and is something my colleague, Kevin Boyce, PhD (Stanford University), and I have been pondering.

Previous ideas about the identity of this fossil group (*Prototaxites*) have included a terrestrial conifer and three very different types of marine seaweed (brown, red and green algae). However, as a result of Devonian paleobotanist Fran Hueber's work in 2001, most recent interpretations have converged on them being a terrestrial fungus—an idea initially proposed nearly 100 years earlier. Further support for this interpretation came from Kevin's work demonstrating highly variable geochemical signatures from *Prototaxites*—comparable to what is expected from a fungus, rather than a plant. Despite this, disagreements remain among which major group (phylum) of fungi they represented, whether it was a spore-producing structure (like a mushroom) or a lichen thallus, and how it obtained nutrition.

In our recent paper—published in the *International Journal of Plant Sciences* as part of an issue devoted to Hueber—we re-evaluated these fungal interpretations in light of modern data that has accumulated over the past 20 years. We ultimately suggested that if *Prototaxites* was fungal, it likely represents an entirely extinct major group (phylum), as various features of it do not align with those observed in modern phyla. In addition, we argued that a range of physiological constraints are inconsistent with a lichen interpretation, and instead suggest *Prototaxites* was likely a slow-growing saprobe that obtained its food by decomposing surrounding dead plant material. Ruling out some of these possibilities, our paper provides a more limited and clearer view of what *Prototaxites* was, and its role in terrestrial ecosystems. However, many questions remain, and development of new and innovative technologies will enable a deeper understanding of this mysterious group.

FIELD.
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**FOSSIL
FUEL**
MEDIUM ROAST

**TWO
BROTHERS**
COFFEE ROASTERS



SCAN TO SHOP!

EXPERIENCE HISTORY IN A CUP

Fossil Fuel is a slightly modern take on the historical union of the world's first known coffee blend, using coffees from Ethiopia and Papua New Guinea. The Field Museum store is proud of this collaboration between the Field and Two Brothers Coffee Roasters. We hope you enjoy a coffee experience that is both historically relevant and impeccably delicious.



© J. KAE GOOD BEAR

PREPARING A STAND-UP HEADRESS FOR DISPLAY

BY ERIN MURPHY, CONSERVATOR, GANTZ
FAMILY COLLECTIONS CENTER

The Field Museum was happy that many pandemic lockdowns were lifted in the spring of 2022 before the opening of the new exhibition *Native Truths: Our Stories, Our Voices*. After working for several years with Native advisors and specialists, much of the time over Zoom, we were able to personally welcome Elders of the Kainai/Blackfoot Nation Charlene Plume, Roger Prairie Chicken, Annette Bruised Head, and Clark Bruised Head to the museum last spring. As members of the Women's Stand-Up Headdress Society, Charlene and Annette came to collaborate on the conservation treatment of the Standup Headdress as it was prepared for display.

These collaborators were extremely generous in sharing their experiences, stories, and knowledge with museum staff. As the headdress' appearance is key to her significance and meaning, the Elders

directed that conservation treatment should center around revitalizing the headdress. Charlene is one of only two people with the authority and knowledge to create this type of headdress, making this a unique visit. With the assistance of Annette and Field conservators, Charlene disassembled the headdress, allowing the conservation team to more fully care for its 28 golden eagle feathers and 19 ermine pelts. Modern conservation care is rarely this interventive and comprehensive. The conservation team learned much about the collaborators' approach to conservation and had an incredible experience working with Charlene and Annette throughout the treatment. At the end of the week-long process, Charlene reassembled the headdress, attaching the feathers and ermine to a new rawhide band she had re-covered with new striking red trade cloth. Finally, the Elders blessed the headdress. The Stand-Up Headdress is beautiful and is ready for her place in the new exhibition! The conservation team was extremely grateful that we were able to learn from the Elders and that the pandemic lockdowns had eased enough that this important, productive visit could take place.

Visit *Native Truths: Our Stories, Our Voices* to see the Stand-Up Headdress and many other materials selected and conserved through collaboration with the Museum's Native partners.



© J. KAE GOOD BEAR

(Top) From left to right: Erin Murphy, Charlene Plume, and Annette Bruised Head remove black paint splatters from the ermine pelts on the unrolled headdress.

(Above) Completed Stand-Up Headdress ready for display.

USING TECHNOLOGY TO STUDY THE TINIEST DETAILS

BY JP BROWN, REGENSTEIN CONSERVATOR,
GANTZ FAMILY COLLECTIONS CENTER

In Mesopotamian culture, documents were written on clay, rather than paper, and signed and authenticated by rolling a seal into the clay to create an impression. Exactly when cylinder seals were first introduced is a matter of debate, but such seals were in wide use by the Jemdet Nasr period (ca. 3100-2900 BCE) and the intricately carved cylinder seals continued to be an important part of the Sumerian, Assyrian, Akkadian, and Babylonian civilizations.

Since the seals are cylindrical, their patterns are difficult to study. In the recent past, the designs on these seals were studied by rolling the seals into thickened plaster, warmed plasticine, or Sculpey modeling clay. Considerable pressure is required to roll out a useful

*Detail of
a cylinder
seal on the
capture
spindle.*



2 CM

impression, and the seal inevitably picks up some of the impression material which has to be carefully cleaned off afterwards. Even with the highest skill levels, the resulting impression is often unsatisfactory and difficult to study unless it is photographed and enhanced, in which case much of the information about the size of the seal is lost.

I developed a non-contact workflow for producing impressions virtually. The carved surface is modeled in three dimensions using automated macro-photogrammetry. The cylinder is then unrolled and inverted in the software to produce a 3D model of the seal's

impression. The process requires about 50 close-up photographs, which were taken by a machine I improvised.

Starting in 2020, with the help of Karl Bitokofer, Olivia Perozo, and two teen volunteers from the 2020 Digital Learning Program, we have digitized all the cylinder seals in the Field Museum's collections (almost all from the excavations at Kish in the 1920s) and put the 112 resulting models online on the Learning Center's Sketchfab site (scan the QR code to check them out!). The 3D models are free to download and accessible for study. Because the models are inherently scaled, scholars and collectors can use them for detailed research and comparison.

Scan this QR
code to see
the cylinder
seal models
on Sketchfab.



(Below) Akkadian polished basalt cylinder seal with physical impression.





This fossil skull is one of more than 350 *Whatcheeria* specimens in the Field's collections.

© KEN ANGIELCZYK, PHD

HOW DID WHATCHEERIA GET SO BIG?

BY KATE GOLEMBIEWSKI, PUBLIC RELATIONS;
AND RACHEL WEGNER, INSTITUTIONAL
ADVANCEMENT

The Field Museum is home to the best, most-complete fossils of a prehistoric superpredator, one that lived hundreds of millions of years even before SUE the *T. Rex*! In a new study, the Field's specimens of this creature, *Whatcheeria*, helped reveal how it grew large enough to menace prey. Instead of growing "slow and steady", it grew rapidly in its youth.

"You definitely could call this thing 'the *T. rex* of its time,'" said Ben Otoo, a co-author of the study and a PhD student at the University of Chicago and the Field Museum. "If it really curled up...it could fit in your bathtub, but neither you nor it would want it to be there."

While *Whatcheeria* looks like a giant salamander, it's actually a "stem tetrapod," an early part of the lineage that evolved into the four-limbed animals alive today.

"*Whatcheeria* is more closely related to living tetrapods like amphibians, reptiles, and mammals than it is to anything else," said Ken Angielczyk, PhD, MacArthur Curator of Paleomammalogy. "That means it can help us learn about how tetrapods evolved."

Some modern tetrapods, including humans, grow a lot as juveniles and stop when they reach adulthood. However, other animals like crocodiles and many amphibians keep growing their whole lives.

To see how *Whatcheeria* grew, Otoo and Angielczyk sent thigh bones from nine *Whatcheeria* individuals of various ages to Megan Whitney, PhD, the study's lead author and a professor at Loyola University Chicago, and her collaborator Stephanie Pierce, PhD, of Harvard University to examine. When an animal is growing, it creates new layers of bone every growing season," said Otoo. "By examining how thick the growth rings are over the course

of an animal's life, you can figure out if the animal's growing continuously throughout its lifetime...or basically growing to an adult size, then stopping."

Whitney found evidence that *Whatcheeria* grew rapidly as a juvenile. "If you're going to be a top predator, a very large animal, it can be a competitive advantage to get big quickly, as it makes it easier to hunt prey and harder for predators to hunt you," said Pierce.

In addition to giving us a better sense of pressures on early tetrapods, the researchers say the findings are a reminder that evolution isn't a neat process. "Evolution is about trying out different lifestyles and combinations of features," said Angielczyk. "And so you get an animal like *Whatcheeria* that's an early tetrapod. It's an experiment in how to be a big predator."

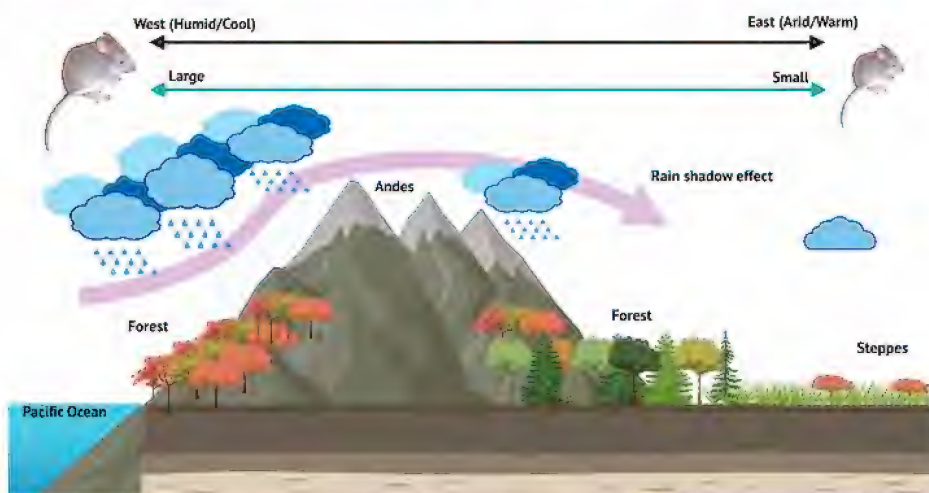
A NEW RULE FOR RAIN SHADOWS

BY NOÉ U. DE LA SANCHÁ, PHD, RESEARCH ASSOCIATE; BRUCE D. PATTERSON, PHD, CURATOR EMERITUS; PABLO TETA, PHD, MUSEO ARGENTINO DE CIENCIAS NATURALES; AND GUILLERMO D'ELÍA, PHD, UNIVERSIDAD AUSTRAL DE CHILE

Ecogeographic rules explain variation in the size and shape of species along environmental gradients. For example, Bergmann's Rule specifies that animals at higher latitudes tend to be larger than other individuals of the same or closely related species near the Equator. Other rules aim to explain size variation based on precipitation, temperature, geography and/or seasonality. The Resource Rule suggests that species become smaller or larger depending on the abundance, size, and availability of the resources they depend on.

However, no rules dictate how organisms should respond to the local climates created by mountains. Mountains create predictable patterns of temperature and precipitation depending on wind direction. On the windward side, as air masses are pushed over the mountain, they cool, forming clouds and dropping precipitation. After passing over the mountain, air warms as it descends, increasing its capacity to hold moisture and creating what is known as a "rain shadow" on the leeward side. This can create strongly contrasting habitats on either side of a mountain range. Because mountains cover roughly 22% of all terrestrial habitats, the rain shadow effect could be an important mechanism shaping biodiversity. Our study aimed to identify the correlates that best describe morphological variation along a pronounced rain shadow gradient in the southern Andes, the world's longest terrestrial mountain chain.

For this study we focused on skull size variation in shaggy soft-haired mice (*Abrothrix hirta*) which are found from the coast of central and southern Chile over the Andes in the Patagonian steppes of Argentina. Our team measured 450 skulls of mice from 67 localities between 35°S and 54°S, from the Pacific to the Atlantic coasts. Using a multivariate approach, we quantified both shape and size of skulls. We then tested which environmental correlates best explained their shape and sizes.



(Top) *Abrothrix hirta* from el Fundo Dan Martin in Valdivia, Chile.

(Above) Schematic of size and morphological variation of *Abrothrix hirta* along a rain shadow gradient across the Andes.

Overall, we found that organisms attain greater sizes in the western Andes where there is no rain shadow effect, below 500 meters of elevation. Our analyses recovered longitude as an important variable in 8 of the 9 analyses conducted. Latitude was not a best fit descriptor, showing that the rain shadow effect overshadowed Bergmann's rule in shaping morphological variation of these mice.

Scan this QR code to learn more about rain shadows.



Field Explorers Summer Camps

By Krista Taylor

CAMPS PROGRAM COORDINATOR,
LEARNING CENTER

Spend the summer making discoveries at the Field Museum!

Field Explorers Summer Camps encourage children to expand their curiosity about the natural world while having fun!

This summer, we are offering two different, one-week camp options for each age group. For young campers there are sessions focused on Prehistoric Animals and Modern Animals. Older camper options include digging into the Natural World-Past and Present and exploring the human story through Archaeology and Anthropology. All camps include the chance to join museum experts and scientists on guided explorations of the museum's exhibitions and collections.

Select the camp that fits your child's interests. From fossils to cultures, experience all the Field has to offer. Attend one or both camp themes for a unique experience unlike any other. Book your child's camp soon!

Field Explorers Summer Camps are perfect for curious minds in grades K-8. Registration is now open for sessions that run June 19 through August 18. Members get a discount when you log in with your Member ID!



(Above) Our Field Explorers camps seek to engage the mind and body in scientific ideas and develop your curiosity of the Earth and its people.

(Right) Camps have a hands on approach to learning. It's fun to engage in the scientific process when you can get your hands dirty.





Field Explorer Camp Sessions

Campers will get an up-close look at the collections, learn what happens behind-the-scenes, connect with Museum experts, investigate using real scientific tools, and discover stories that only the Field Museum can share.

Grade K: Little Scientists

Prehistoric Animals: Travel back in time with SUE the *T. rex* and learn about prehistoric animals, plants, and insects.

Modern Animals: Explore modern day insects, animals and nature through the museum's native gardens and amazing exhibitions.

Grades 1-2: Investigators

Prehistoric Animals: Learn how fossils found today can teach us things about the past—like what dinosaurs ate and how they moved. Visit the Fossil Prep Lab and meet with the Field's paleontology experts.

Modern Animals: Spend a week discovering different modern animals from all around the world and explore how their differences and environments lead to extraordinary things!

Grades 3-4: Adventurers

Natural World: Past and Present: Learn the stories of some of the Field's most famous specimens. Meet with Field scientists for exclusive info about SUE, a Tully Monster, and more.

Archaeology/Anthropology: Explore how Field Museum researchers use objects to understand the human story. Campers will explore using objects to share these stories.

Grades 5-6: Science Detectives

Natural World: Past and Present: What happens behind the scenes at the Field? Spend the week focused on a scientific question. Interview a real scientist, get an up-close look at the collections, and create your own hypotheses!

Archaeology/Anthropology: When archaeologists find an object, they must figure out what it is and how it was used. Get up close to the collections and learn how scientists discover objects from the past and how we care for them today.

Grades 7-8: Specialists

STEM Investigation: Spend a week behind-the-scenes! Learn from museum experts the skills and technologies used to collect, conserve, and create exhibitions.

Scientific Illustration: Spend a week drawing and painting in the Field! Learn from scientific illustrators about the techniques used to document life around us.

For more information and to register, visit fieldmuseum.org/summer-camps-programs.

(Above) Get up close to our world-class collections and discover something new.



Member Opportunities

FIRST KINGS OF EUROPE MEMBER PREVIEW DAYS

March 29 and 30
9am–4:30pm

First Kings of Europe marks an astounding moment in museum history. This gathering of more than 150 exquisite objects—including jewelry, weapons, armor, and more—has never before been shown together. Travel back to 5000 BCE to uncover what prehistoric tools and ritual sculptures can tell us about life in the Balkans' earliest societies.

This must-see exhibition will appear at only three museums in North America. We invite you to experience an exclusive first look at the Museum's newest special exhibition, *First Kings of Europe* during Member Preview Days on March 29, 2023, and March 30, 2023, from 9am to 4:30pm.

FIRST KINGS OF EUROPE MEMBER OPENING

April 4
5:30–8:30pm

Join us on Tuesday, April 4, 2023, to be among the first to visit our newest exhibition *First Kings of Europe*. Enjoy the exhibition after hours, learn about some of the pieces on display and the collaborative efforts to bring them to Chicago from our Museum scholars, and take part in family-friendly activities.

5:30–8:30pm: Enjoy members-only access to *First Kings of Europe*. The Field Bistro will have food and drink available for purchase.

6:30–7:30pm: Attend the program and presentation in James Simpson Theatre by William A. Parkinson, Ph.D., Curator and Professor of Anthropology, Field Museum and the University of Illinois at Chicago, and Attila Gyucha, Ph.D., Curator, Assistant Professor of Anthropology, University of Georgia.

Health and safety information: Masks are encouraged. Please note, the Museum follows the city's COVID guidelines, policies may change prior to the event.



Museum Hours

The Field Museum is open from 9am–5pm every day except Thanksgiving and Christmas Day, with last admission at 4pm. For special hours, parking, and public transportation options, visit fieldmuseum.org/visit.



The Field Museum salutes the people of Chicago for their long-standing support of the Museum through the Chicago Park District.

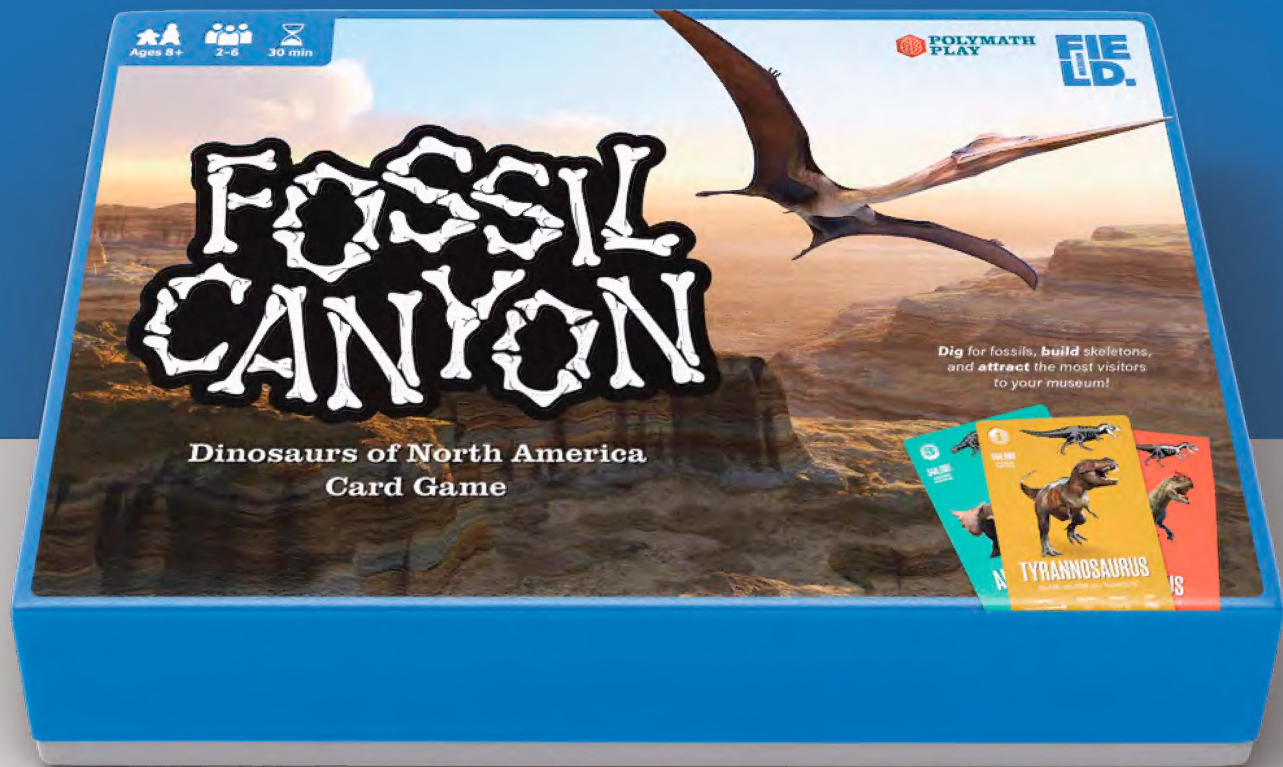


Official Airline of
the Field Museum



ILLINOIS
ARTS
COUNCIL
AGENCY

This program is partially supported by a grant from the Illinois Arts Council Agency.



Dig for fossils, build skeletons, and attract the most visitors to your museum!

Fossil Canyon is a family-oriented set-collection card game developed by the Field Museum in collaboration with Polymath Play. Fossil Canyon features multiple ways to play, including a competitive game for 2-6 players and a cooperative/solo game for 1-4 players. In both, you are a fossil-hunting paleontologist constructing complete dinosaur skeletons that attract visitors to your museum. Endgame bonuses reward the theme of your museum, and you can enhance your museum's reputation through groundbreaking research.



FIELD.
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SCAN
TO SHOP!



MUSEUMS FOR ALL

As a Museums for All partner, the Field Museum offers reduced admission to visitors who receive state food assistance. Anyone with an Electronic Benefits Transfer (EBT, Link) or WIC card can present the card to receive \$3 admission per person for up to 6 people including the cardholder.



Sponsor:



| FORD MOTOR COMPANY FUND

Thank you to the sponsors of *First Kings of Europe*



First Kings of Europe was organized by the Field Museum. The exhibition has been made possible in part by a major grant from the National Endowment for the Humanities: Democracy demands wisdom.

Field Museum
Major Sponsor:

DISCOVER



**NATIONAL
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FOR THE
HUMANITIES**

Generous foundation
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Any views, findings, conclusions, or recommendations expressed in this exhibition do not necessarily represent those of the National Endowment for the Humanities.

The Field Museum gratefully acknowledges the sponsors and supporters of *First Kings of Europe*.



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72ND ANNUAL MEMBERS' NIGHTS



April 20 & 21, 2023, 5–9pm

Fascinating research happens every day at the Field Museum and Members' Nights is your chance to meet our experts and learn about their work. Don't miss your chance to be part of our biggest event of the year!

All exhibitions will be open, and there will be activities for both kids and adults. **For the health and safety of our staff and members, masks are required for access to all behind-the-scenes areas.**

**RSVP
TODAY!**

FREE AND EXCLUSIVELY FOR FIELD MUSEUM MEMBERS!

Space is limited; reservations are required. RSVP by April 16, 2023 at fieldmuseum.org/memberevents or by calling the membership office at 312.665.7700.

The Field Museum will close at 4pm and reopen for the event at 5pm.